

Request for Conditional Closure

Site: Open Pits Site, also known as Two-Party Agreement (TPA) Site 6/National Oceanic and Atmospheric Administration (NOAA) Site 6. The site will be referred to as the Open Pits Site herein.

Location: St. George Island, Alaska is approximately 800 miles southwest of Anchorage in the Bering Sea (Figure 1). The site is located east of the City of St. George and may be accessed from the road to the east rookery approximately 1,000 feet after passing the school heading east (Figure 2).

Legal Property Description: TPA Site 6 is located within Tract 52, in Section 29, Township 41 South, Range 129 West of the Seward Meridian, Alaska, from a Bureau of Land Management land survey filed February 15, 1985 (Figure 2). It is centered at Latitude 56° 36' 065" North, Longitude 169° 32' 18" West. The Aleut Corporation owns the subsurface estate. The surface estate is owned by the City of St. George.

History and Background:

The Open Pits Site is the location of a former quarry that covers an area of approximately 2 acres. Aerial photographs from 1948 and 1967 depict the area being used as a quarry. Since 1967 and up until the time that NOAA began environmental investigations on St. George, the site had been used for the disposal of solid waste, including domestic trash, coal, building materials, pipe, tires, scrap metal, concrete structures, drums, lead acid batteries, heavy equipment, and fuel storage tanks (NOAA 2003; Woodward-Clyde 1995).

Type of Release: Petroleum products may have leaked from heavy equipment, drums, or above ground storage tanks that had once been discarded at the site. Lead contamination could have been released from lead acid batteries.

Summary of Site Investigations:

Expanded Site Inspection, Woodward-Clyde 1993: In 1993, an inventory and bulking operation was conducted by Woodward-Clyde to remove government-owned drums, propane cylinders, and batteries from various locations on the island (Woodward-Clyde, 1994). Forty drums and six automotive batteries were inventoried and removed from the Open Pits Site. One vehicle and one abandoned crane were inspected and determined to be free of fluids. Four drums containing waste material were sampled and characterized. Chlorinated solvents and polychlorinated biphenyls (PCBs) were not detected in drum samples collected from the site and analyzed in an off site laboratory.

Initial Assessment, Hart Crowser 1996: In 1996, Hart Crowser conducted an initial site assessment with soil sample collection, the results of which are presented in the Expanded Site Inspection report (Hart Crowser, 1997). Thirteen test pits (TP) were

excavated in the investigation (Figure 3). Thirty-nine soil samples were submitted to a field laboratory for petroleum hydrocarbon analysis; 12 for PCB and pesticide analysis; and six for benzene, toluene, ethylbenzene, and total xylenes (BTEX) analysis. One of the samples was found to have gasoline range organics (GRO) at a concentration of 80 milligrams per kilogram (mg/kg), and diesel range organics (DRO) were detected in 11 of the samples at up to 6,800 mg/kg. Residual range organics were detected in eight of the samples at up to 2,100 mg/kg. BTEX, PCBs, pesticides, and metals were eliminated as contaminants of concern. Hart Crowser recommended excavation and removal of 620 cubic yards (yd³) of contaminated soil.

St. George Tanaq Debris Cleanup, 1997: In 1997, debris cleanup activities were conducted by St. George Tanaq Corporation (Polarconsult, 1997). These activities involved the collection and off-island disposal of solid waste, machinery, scrap pipe, and other metal debris from the site. Evidence of petroleum contamination was observed under a wrecked crane during its removal from the site.

Tetra Tech Groundwater Monitoring, 2002, 2003, 2004: Groundwater monitoring for GRO, DRO, and volatile organic carbons was conducted at the Open Pits Site in 2002, 2003 and 2004 at two monitoring wells as shown in Figure 4 (Tetra Tech 2005). A third monitoring well at the Inactive/Abandoned Diesel Tank Farm, TPA Site 23, is shown on Figure 4 to provide groundwater results from a well upgradient of the Open Pits Site. No contaminants have been detected in these wells with analyses that achieved detection limits below the 18 AAC 75.345 Table C cleanup levels.

Summary of Applied Cleanup Levels:

The TPA allows NOAA to apply cleanup levels using the methods described in the 1991 non-underground storage tank (UST) regulations (ADEC 1991). However, with ADEC approval, NOAA elected to use current regulations (ADEC 2003) to address soil cleanup, except for benzene for which NOAA applied the 1991 cleanup level of 0.5 mg/kg. NOAA presented the applied cleanup methods in the Open Pits Site corrective action plan (Polarconsult 2002). In summary, the current State of Alaska Oil and Hazardous Substances Pollution Control Regulations (Title 18 of the *Alaska Administration Code* [AAC] 75) provides four methods to determine soil cleanup levels at petroleum-contaminated sites. Method One involves the use of Table A1 of 18 AAC 75.341(a) to calculate a cleanup level and can only be applied to sites where the groundwater does not contain hazardous substances associated with the site. Method Two, discussed at 18 AAC 75.341(c), employs two separate tables, including one for individual contaminants (Table B1) and one for petroleum hydrocarbon contaminants (Table B2). Method Three, discussed at 18 AAC 75.340(e), allows substitution of site-specific data for selected parameters used in the Method Two equations. Method Four, discussed at 18 AAC 75.340(f), requires the development and subsequent ADEC approval of a site-specific risk assessment (ADEC 2003).

NOAA selected Method Two to determine cleanup levels for DRO, RRO, and BTEX at the Open Pits Site. Figure 3 shows the locations of soil samples and results that exceeded the Method Two cleanup levels prior to cleanup actions.

Summary of Cleanup Actions:

Polarconsult conducted an excavation of petroleum contaminated soil (PCS) at three locations at the Open Pite Site in 2002 (Polarconsult 2004), following the approved corrective action plan (Polarconsult 2002) (Figure 3). Although Hart Crowser had estimated in 1997 that only 620 cubic yards (yd³) of PCS remained on site, Polarconsult removed a total volume of 2,149 yd³ (Polarconsult 2004). An additional 361 yd³ of clean overburden was also excavated in the process, later used as clean fill. The cleanup actions at the three locations are discussed below.

Southeast Subsite: Polarconsult's excavation in the vicinity of TP-6 identified visibly contaminated soil exhibiting a strong diesel odor (Figure 5). Polarconsult evaluated soil on-site with a photoionization detector (PID) in an effort to estimate if the soil exceeded the site cleanup levels. Recovery of contaminated soil continued downward and outward until soil exceeding the cleanup levels was no longer evident, as determined by field screening. A total volume of 22 yd³ of PCS was removed.

Crane Subsite: Polarconsults's excavation in the former area of the wrecked crane identified visibly contaminated soil with a strong diesel odor (Figure 6). Polarconsult continued recovery of PCS downward and outward until soil exceeding the cleanup levels was no longer evident, as determined by field screening, or until refusal occurred in competent red scoria at a depth of 5 feet bgs. Polarconsult observed that contamination continued vertically downward into the competent red scoria, but it could not be removed with the available equipment. After completing the removal of PCS, one confirmation sample exceeded the current Method Two cleanup level for Diesel, and one exceeded the current Method Two cleanup level for benzene, but this second sample did not exceed the 1991 Method Two benzene cleanup level used for the site. A total volume of 132 yd³ of contaminated soil was removed.

Coal Subsite: Polarconsult's initial recovery activities at the Coal Subsite involved the removal and segregation of loose anthracitic coal. The coal was transported to the Long-term PCS Stockpile and placed in a separate location from petroleum-contaminated soil. Polarconsult began excavating in the area around TP-8 suspected to be contaminated with petroleum as reported by Hart Crowser, 1997 (Figure 7). However, Polarconsult did not find elevated levels of contamination, and refusal was encountered at 2 feet bgs instead of 8 feet bgs as expected. These discrepancies probably resulted from difficulties in relocating the TP-8 site.

In an effort to find the known contaminated soil, Polarconsult excavated a new series of test pits. Polarconsult encountered visibly contaminated soil exhibiting a strong diesel odor northwest of the location originally believed to be TP-8. Observation indicated that the petroleum contamination continued downward into the competent basalt where it could not be removed with the available equipment. In the softer scoria, excavation was

continued beyond the planned stopping depth of 15 feet bgs in an effort to reach the deepest extent of contamination. Recovery of contaminated soil continued vertically and horizontally until soil exceeding the cleanup levels was no longer evident as determined by field screening, until refusal occurred, or until the excavation extended beyond the limit of the excavator at about 21 feet bgs (Figure 7). Refusal occurred in competent basalt at several locations. A total volume of 1,995 yd³ of contaminated soil was removed.

Following the corrective action plan (CAP), Polarconsult backfilled the three Open Pits Site subsites in late 2002, to the original contours that existed at the beginning of the project (Polarconsult 2004). The excavations were partially backfilled with 361 yd³ of clean overburden that had been removed from the excavations, analyzed, and shown not to exceed the cleanup levels for petroleum compounds. The remaining volume of the excavations was filled with treated PCS from NOAA's enhanced thermal conduction treatment system. Since completion of the project, no erosion of the backfilled sites has occurred and NOAA believes that the site restoration goals of the project have been met as defined in the CAP.

Recommended Action:

In accordance with paragraph 59 of the TPA (NOAA 1996), NOAA requests written confirmation that NOAA completed all appropriate corrective action to the maximum extent practicable at the Open Pits Site, TPA Site 6, NOAA Site 6, St. George Island, Alaska. NOAA requests ADEC grant a conditional closure that will not require further remedial action from NOAA. NOAA understands ADEC will require additional containment, investigation, or cleanup if subsequent information indicates that the level of residual contamination does not protect human health, safety, or welfare, or the environment.

References:

- Alaska Department of Environmental Conservation (ADEC). 1991. Interim Guidance for Non-UST Contaminated Soil Cleanup Levels. Contaminated Sites Program. July 17.
- ADEC. 2003. 18 AAC 75, Articles 3 and 9. *Oil and Hazardous Substances Pollution Control Regulations*. State of Alaska. Effective date January 30, 2003.
- Hart Crowser. 1997. *Expanded Site Inspection of St. George Island, Pribilof Islands, Alaska*. January.
- National Oceanic and Atmospheric Administration (NOAA). 1996. *Pribilof Islands Environmental Restoration Two Party Agreement*, Attorney General's Office File No. 66 1-95-0126. January 26, 1996.
- NOAA. 2003. Personal conversation between David B. Winandy, NOAA Contracting Officers Technical Representative, and David Ausman of Polarconsult Alaska,

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St. George Island, Alaska

- Inc. Information provided by NOAA regarding the history of the Open Pits Site, TPA 6. Review of aerial photograph of site. St. George Island, Alaska. October 8.
- Polarconsult Alaska Inc. (Polarconsult). 1997. *Environmental Site Investigation, St. George Debris Cleanup and UST Decommissioning, Pribilof Islands Environmental Restoration Project*. Volume 1. November 2.
- Polarconsult. 2002. *Corrective Action Plan, Remedial Corrective Action Project, Open Pits Site, TPA Site 6, St. George Island, Alaska*. August 23.
- Polarconsult. 2004. *Final Corrective Action Report, Open Pits Site, TPA Site 6 Remedial Corrective Action Project St. George Island, Alaska*. August 23.
- Tetra Tech. 2005. Draft Field Investigation Report, St. George Island, Alaska. May 2.
- Woodward-Clyde Federal Systems, Inc. (Woodward-Clyde). 1994. *Final Report, Phase 1B Environmental Site Assessment, St. George Island, Alaska*. March 31.

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For the National Oceanic and Atmospheric Administration



John Lindsay
NOAA, Pribilof Project Office

8/01/05
Date

Approvals: In accordance with Paragraph 59 of the Two Party Agreement, this is to confirm that all corrective action has been completed to the maximum extent practicable at the Open Pits Site, TPA Site 6, NOAA Site 6, St. George Island, Alaska, in accordance with the Agreement and that no further remedial action is required as a part of this conditional closure granted by ADEC.

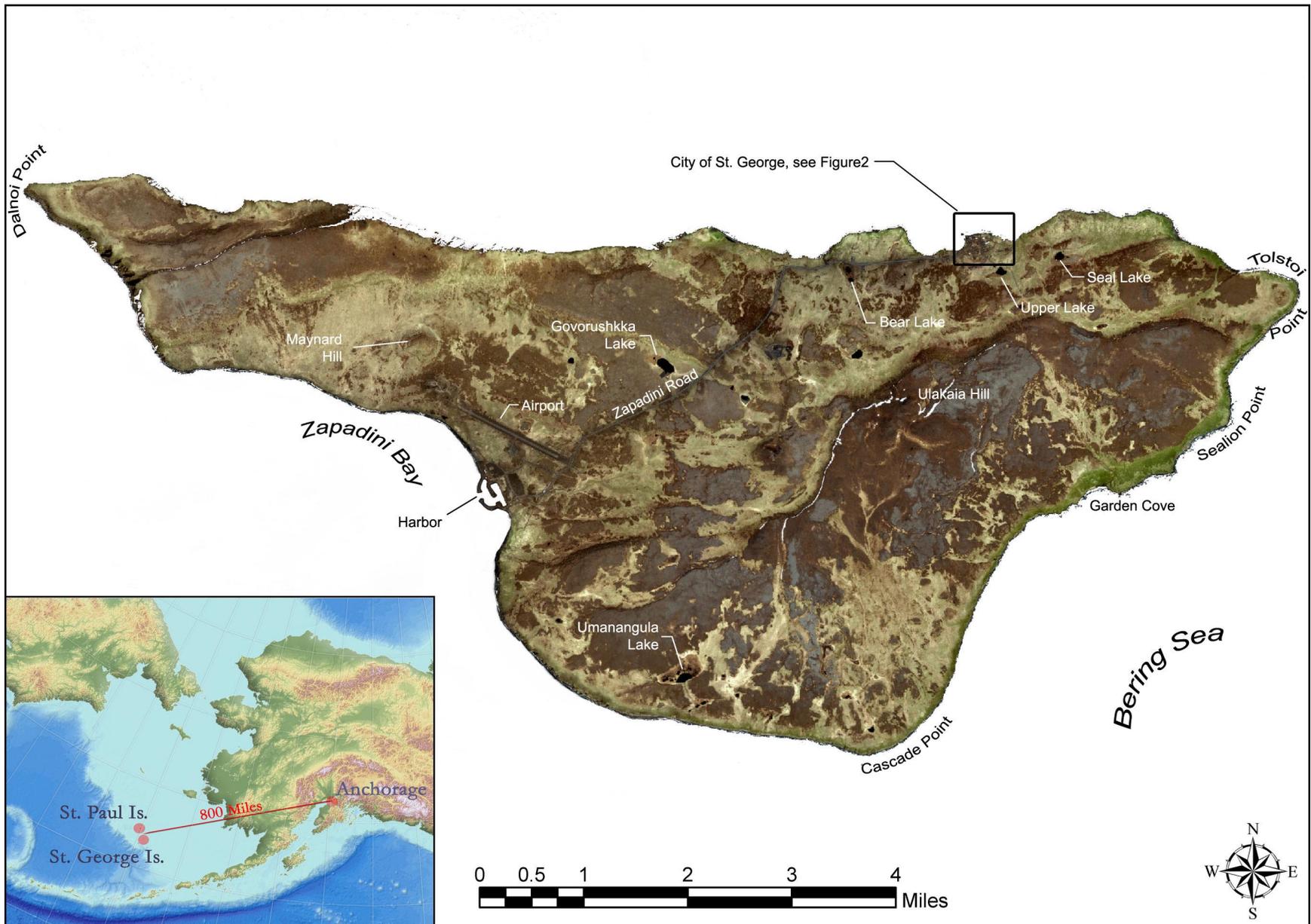
For the Alaska Department of Environmental Conservation



Louis Howard
Alaska Department of Environmental Conservation
Remedial Project Manager

8/08/05
Date

Figures



Figure

1

**Island and Vicinity Map
Open Pits Site
TPA Site 6/NOAA Site 6
St. George Island, Alaska**

Source: Ikonos 2001 Satellite Image





Figure
2

**Legal Property Description Map
Open Pits Site
TPA Site 6/NOAA Site 6
St. George Island, Alaska**

Source: AeroMap U.S. 9/28/96 Aerial Photograph; Bureau of Land Management Land Survey Filed February 15, 1985



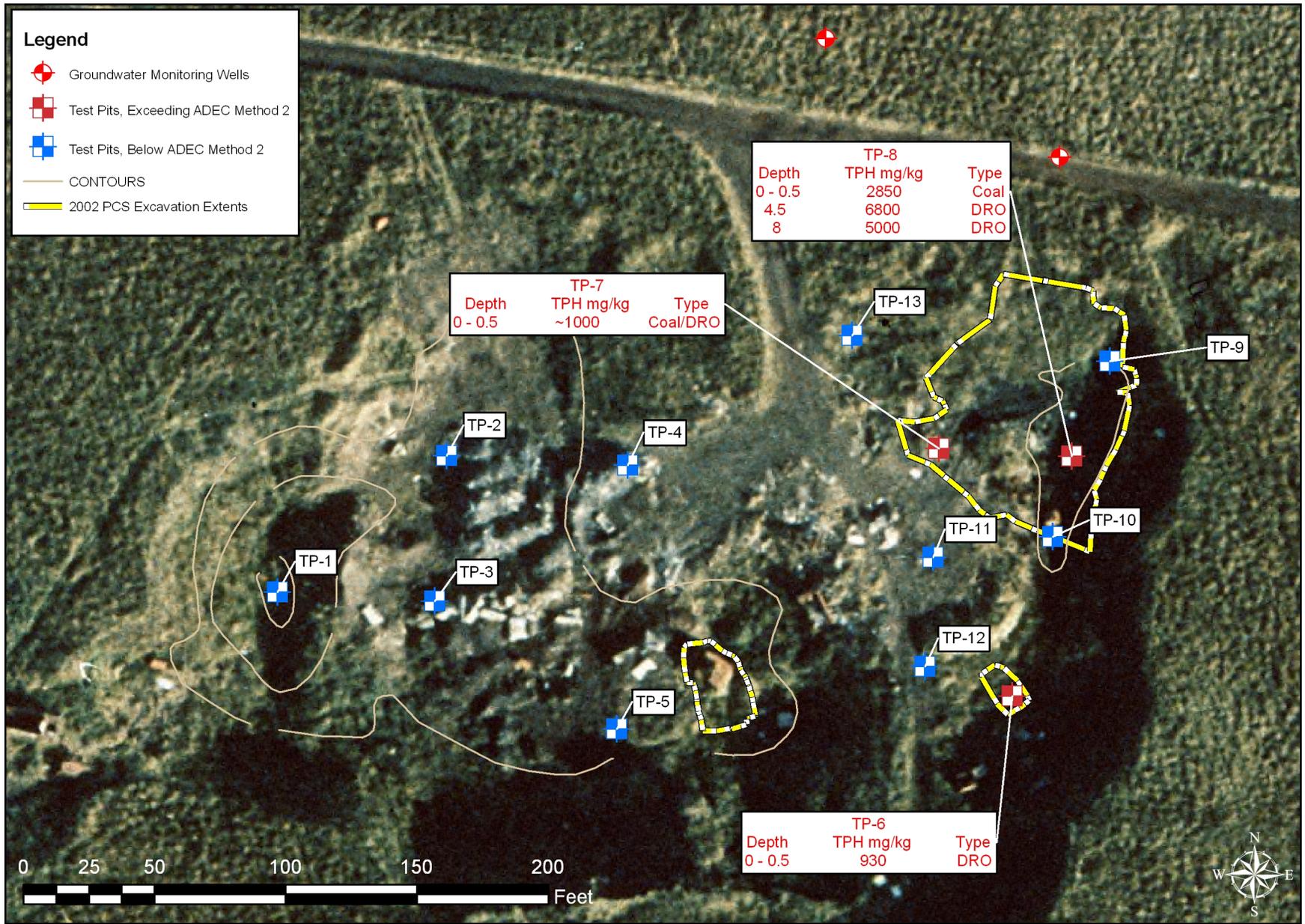
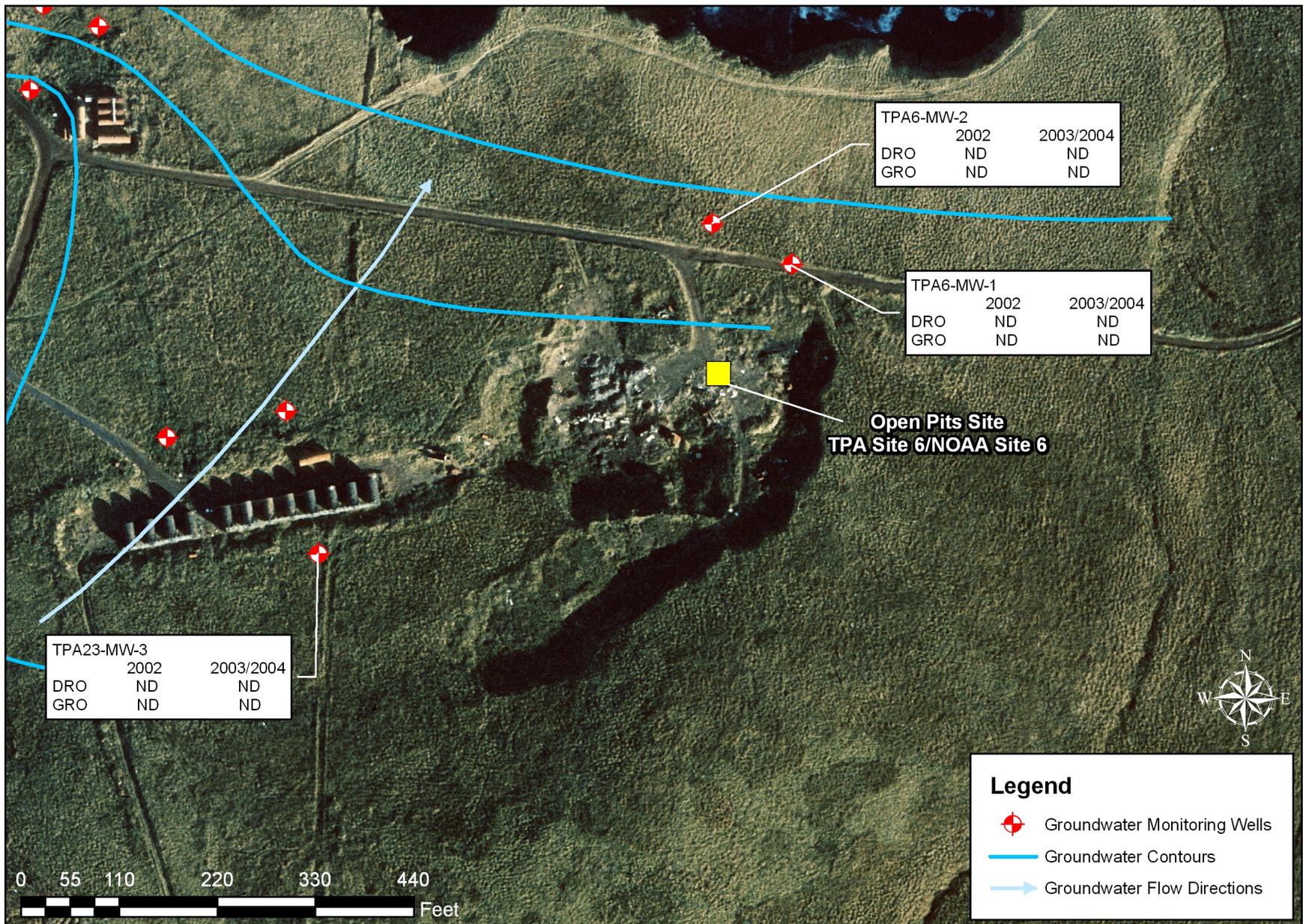


Figure
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**Hart Crowser 1996 Site Investigation
Open Pits Site
TPA Site 6/NOAA Site 6
St. George Island, Alaska**

Source: Expanded Site Inspection St. George Island, Alaska. Volume 1, Hart Crowser, January 1997; Aero Map U.S. 9/28/96 Aerial Photograph.





Figure

4

**Groundwater Sampling Results for
Petroleum Hydrocarbons
Open Pits Site
TPA Site 6/NOAA Site 6
St. George Island, Alaska**

Source: TTEMI Initial Draft Field Investigation Report St. George Island, Alaska April 26, 2005; AeroMap U.S. 9/28/96 Aerial Photograph

Note: Results in µg/L (Microgram per liter); ND (analyte was analyzed for but was not detected); Results presented represent the maximum detection for the sampling cycle. Where no results are listed, DRO, GRO & BTEX were not detected.



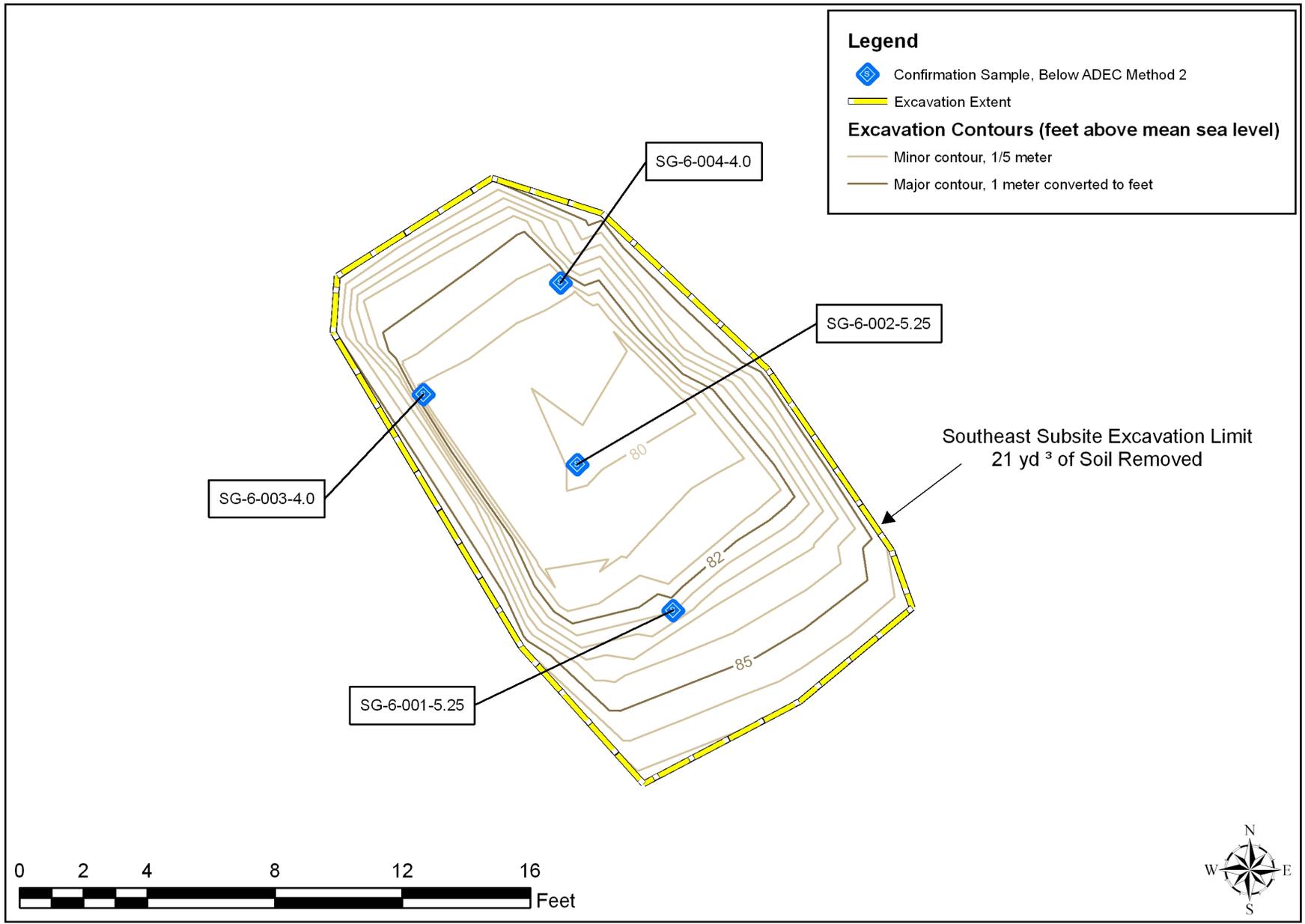


Figure
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**Southeast Subsite
Open Pits Site
TPA Site 6/NOAA Site 6
St. Goerge Island, Alaska**

Source: Survey Data Collected in the Field by Pribilof Project Staff; Analytical Data Provided in the Final Corrective Action Report Open Pits Site, TPA Site 6 Remedial Corrective Action Project St. George Island, Alaska Volume 1.



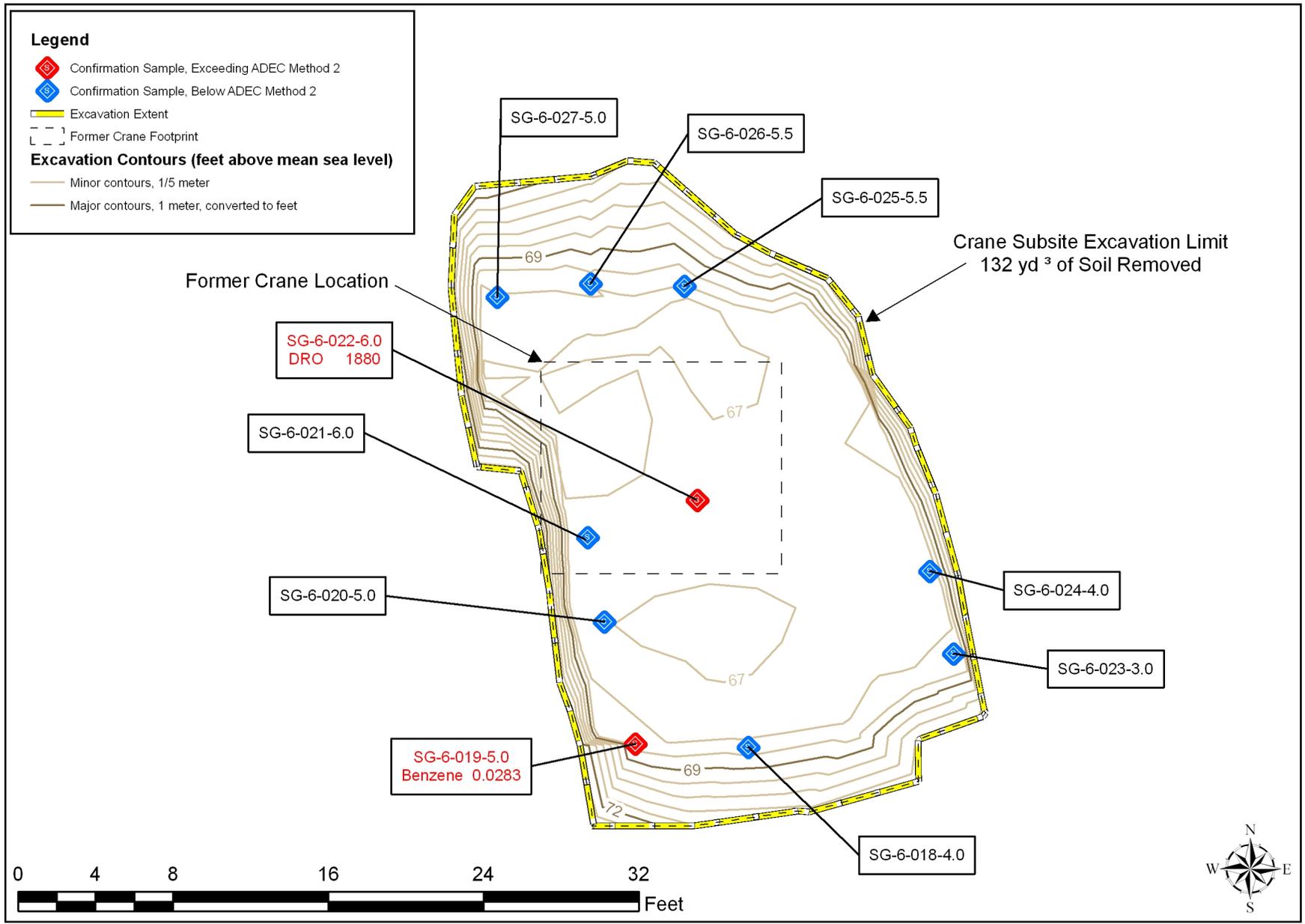


Figure
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**Crane Subsite
Open Pits Site
TPA Site 6/NOAA Site 6
St. George Island, Alaska**

Source: Survey Data Collected in the Field by Pribilof Project Staff; Analytical Data Provided in the Final Corrective Action Report Open Pits Site, TPA Site 6 Remedial Corrective Action Project St. George Island, Alaska Volume 1.



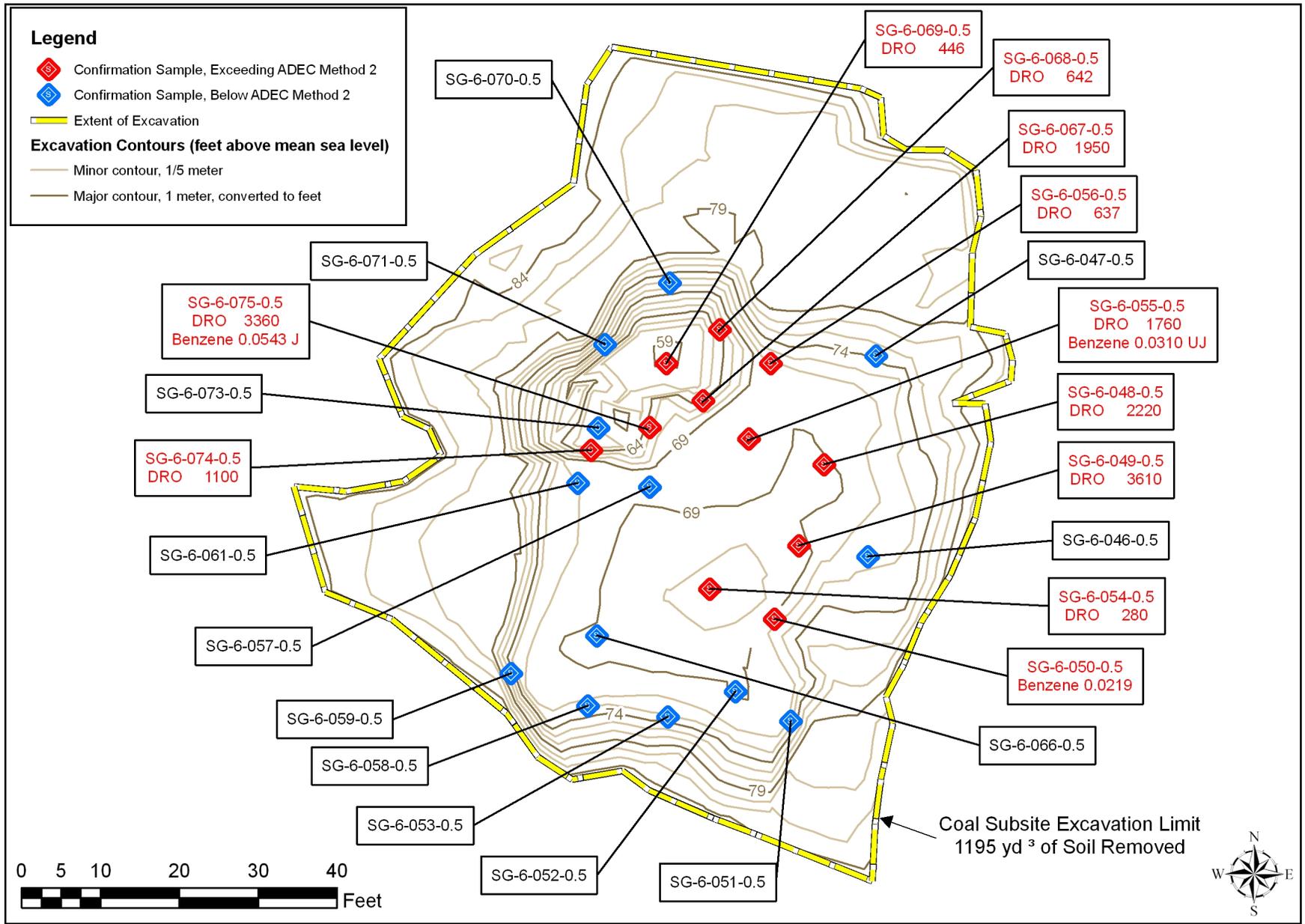


Figure
7

**Coal Subsite
Open Pits Site
TPA Site 6/NOAA Site 6
St. George Island, Alaska**

Source: Survey Data Collected in the Field by Pribilof Project Staff; Analytical Data Provided in the Final Corrective Action Report Open Pits Site, TPA Site 6 Remedial Corrective Action Project St. George Island, Alaska Volume 1.

